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From: Shai Israel Mandel <mandes@rpi.edu>
To: 'rm8775@fcc.gov' <rm8775@fcc.gov>
Date: 5/8/96 8:04pm
Subject: Some arguments against an FCC prohibitory ruling on internet telephony

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Concerning the claim that internet telephony would be detrimental to the = telecommunications industry. This may well be true regarding ACTA = providers which I understand for a large part are not owners of the = physical telecommunications infrastructure but it has not been the way = to hamper beneficial technology because of the interests of a select few = ("few" in comparison to the potential beneficiaries). Automobiles were = not stopped because of the interests of the Railroad (although there may = not have been a governing authority - but that is not the point). The = providers of the actual physical infrastructure will not be put in = jeopardy nor will they be hindered from maintaining the infrastructure = for since this is a prerequisite for internet telephony the maintainers = of the infrastructure will have to be reimbursed the cost of = maintenance. They may however play a smaller role as actual "soft" = providers of telephone service.=20

11

David Fishman

CC: 'jeff@pulver.com' <jeff@pulver.com>

RESEARCH

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MAY 9 1996

From: Rick Ridgway <ridgway@gregg.world-access.com>
To: A16.A16(rm8775)
Date: 5/8/96 9:01pm
Subject: the ACTA petition

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Please stop big business from rolling over innovation in the realm of interpersonal communication. The communications companies whining over

"i-phone" programs already make market rates on the internet backbone.

MCI, Sprint, and AT&T are already the major players for providing that backbone. Why should they be paid twice? If the 'net gets overloaded with voice traffic, then they should add more bandwidth and charge the internet providers accordingly for the new servers and cable.

If the FCC should start banning classes of software that have no intent of physical or psychological harm to their users, then democracy does not really exist in America and the oligarchy of big business are truly our leaders. (And yes,

I have a sinking feeling that is already more true than it is not.)

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MAY 9 1996

From: John V LuValle <John.V.Luvalle@jpl.nasa.gov>
To: rm8775@fcc.gov Return requested <rm8775@fcc.gov>
Date: 5/8/96 9:05pm
Subject: Voice communication over the internet

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

The ACTA complaint that voice communication over the internet lowers the cost of telecommunications is incorrect.

The current technology is experimental and does not provide the quality of present long distance voice communication.

This will improve, but the real situation is this now means that all current long distance carriers are charging too much

(by perhaps a factor of a hundred) and they should upgrade their technology, or lose out as the market leaves them behind

(along with the buggy whip manufacturers).

Regards,

John LuValle
556 E. Sacramento St.
Altadena, Ca, 91001

John LuValle
556 E. Sacramento St.
Altadena, Ca, 91001

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MAY 9 1996

From: Bruce Wilkinson <bww@teleport.com>
To: A16.A16(rm8775)
Date: 5/8/96 10:16pm
Subject: ACTA Petition: DA 96-414

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

To be brief, it is clear that a petition for control of the internet by the traditional voice carriers is both self-serving and anti-competitive. Although the transmission of complex digitized information such as voice and video will present challenges to existing pricing models for these services, we would be foolish indeed to give the henhouse to the foxes rather than deal with those issues in a way that supports the new paradigm of open intercommunications that the internet represents. It is frightening to think that the internet might suffer the same stifling fate as the telephone system. I'm sure that other consumers would express themselves similarly if given the opportunity.

CC: FCCMAIL.SMTP("senator_gorton@gorton.senate.gov")

[Handwritten signature]

[Faint, illegible text]

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MAY 9 1996

From: Paul O'Connor <dumas7@ix.netcom.com>
To: A16.A16(rm8775)
Date: 5/8/96 10:56pm
Subject: Limiting our freedom onm the Internet

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

DO NOT limit the freedom of people on the Internet to buy software allowing them to talk to others on the Net. This is our right and must NOT be diminished by the actions of ACTA. Paul O'Connor

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MAY 9 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

From: Kevin Begley <kevin.begley@mailbox.swipnet.se>
To: A16.A16(rm8775)
Date: 5/9/96 2:41am
Subject: RM No. 8775

Dear FCC,

You recently recieved a petition to regulate the NET and ban internet phone and video communication software. I can only say - please don't do so! Think of progress and the future.

What if we had never progressed from the telegraph to the telephone? From the radio to the TV? From the horse and buggy to the train? Well, the reality is that the Internet is a very clear step into the future of advanced and improved communication. Internet phone and video technology is a very significant communication improvement which is already signifying a huge intercommunication jump. New technology means cheaper prices and more advanced and thorough communication. Video phoning is very much a reality with the NET and it's cheap enough to be afforded by the common citizen. That's great! ("Hey look you can call your relatives cheap and even see their faces while you talk to them!")

Phone and video over the NET is just the sort of thing that has a very practical function for the average user and potential user of computers. This means that as the ability to use a computer as a phone (with video) spreads then the use and spread of computers will flourish and society will become ever more computer literate. It's just the sort of development that can entail a very expansive boost to the advancement of the local, national, and global communication networks.

Please leave the NET as well as phone and video communication software alone. Let communication developers advance via the spirit of the market. Let the consumers decide in which ways they want to communicate. Please don't cripple communication for the sake of those who are affraid of the competetion. If these companies don't like future developments then the best thing for them would be to use their resources to work on developing future communication software and hardware instead, not in trying to hinder those who are doing so. Protecting the ACTA companies from competetion will only entrench a useful but in some ways antiquated means of communication and will cripple the rappidly evolving communication technology for the future.

Once agian, Please Reject the petition RM No. 8775 in it's entirety!

Thank You!
Sincerely,
Kevin Begley
A US citizen living abroad

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From: <CMO@COHNMARKS.COM>
To: A16.A16(rm8775)
Date: 5/9/96 4:25pm
Subject: REGULATION OF INTERNET TELEPHONY - BBN COMMENTS

MAY 9 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

THE COMMENTS REPRODUCED BELOW WERE FILED WITH THE U.S.
FEDERAL COMMUNICATIONS COMMISSION ON MAY 8, 1996, BY COHN
AND MARKS ON BEHALF OF BBN CORPORATION.

In the Matter of)
)
PETITION FOR DECLARATORY RULING,)
SPECIAL RELIEF, AND INSTITUTION OF) RM No. 8775
RULEMAKING BY)
AMERICA'S CARRIERS)
TELECOMMUNICATION ASSOCIATION)

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To the Commission:

COMMENTS OF BBN CORPORATION

BBN Corporation ("BBN") by its attorneys and pursuant to Section 1.415 of the Commission's rules, hereby files its comments in response to the America's Carriers Telecommunication Association ("ACTA") petition for declaratory ruling, special relief, and institution of rulemaking against VocalTec, Inc., and other providers of telephone services via the Internet, and the Commission's March 8, 1996, public notice seeking comments on the ACTA petition.

I. BBN'S INTEREST IN THIS PROCEEDING.

Through its BBN Planet commercial services, BBN is one of the nation's largest providers of managed Internet access and value-added services for businesses and universities, government agencies, and other organizations. BBN's Planet services include high-speed, dedicated and dial-up Internet access; World Wide Web site creation and hosting; managed Internet security; Internet application consulting and systems integration; network management; and development of value-added, Internet-based applications. BBN also provides secure, global networks for government and commercial customers. BBN helped design and build the first packet-switched data communications network, the ARPANET, for the U.S. Department of Defense. Last month BBN was selected as the first Internet solutions provider authorized by the U.S. General Services Administration to provide Internet connection services to all government agencies. Originally designed primarily to convey data traffic between computers and remote "dumb" terminals, BBN's networks have continually evolved to a point where a few customers are beginning to use them for voice and video communications. As these networks have gotten faster, they have also gotten smarter: BBN is augmenting its networks with collaborative Internet technologies, such as intelligent agents that enable effective retrieval of useful information from multiple electronic sources.

II. BACKGROUND.

In its petition, ACTA submits that, both under established precedents defining "common carriage" or "public utility" types of operations for purposes of regulatory jurisdiction, and by statutory enactment, purveyors of long distance voice communications services via the Internet are interstate telecommunications carriers, subject to Federal regulation under Title II of the Communications Act of 1934, and are also intrastate telecommunications carriers, subject to regulation by state public utility commissions. ACTA implies that the Commission should assert Title II jurisdiction over these Internet service providers and impose common carrier, utility-style regulation on them, and that state public utility commissions should follow suit within the ambit of their respective jurisdictions.

III. EXISTING LAWS AND PRECEDENTS DO NOT COMPEL THE COMMISSION TO IMPOSE COMMON CARRIER, UTILITY-STYLE REGULATION ON INTERNET TELEPHONY.

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In the Final Decision in Computer II, the Federal Communications Commission (**the Commission**) established a dichotomy between **basic services,** which would be subject to regulation, and **enhanced services,** which would not be regulated. The Commission characterized basic services as **a pure transmission capability over a communications path that is virtually transparent in terms of its interaction with customer supplied information.** [Second Computer Inquiry, Final Decision, 77 FCC 2d 384 (1980) at 420, ¶ 96.] The agency defined enhanced services as follows:

[T]he term **enhanced service** shall refer to services offered over common carrier transmission facilities, which employ computer processing applications that act on the format, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different or restructured information; or involve subscriber interaction with stored information. Section 64.702(a) of the Commission's Rules, 47 C.F.R. §64.702(a).

In the Final Decision, the Commission classified protocol processing as an enhanced service; it thoroughly reexamined and affirmed that classification in several subsequent decisions. [See Communications Protocols under Section 64.702 of the Commission's Rules and Regulations, Memorandum Opinion, Order and Statement of Principles, 95 FCC 2d 584 (1983); *In the Matter of Communications Protocols* under Sections 64.702 of the Commission's Rules and Regulations, Memorandum Opinion and Order on Reconsideration, 2 FCC Rcd 3035 (1987) (1987 Communications Protocols Order) at 3074-3082, ¶¶ 12-71.]

The Commission has never treated enhanced services as if they were synonymous with data communications. Thus, for example, it found an AT&T packet-switched transmission service provided without protocol conversion to be a basic service. [See *American Telephone and Telegraph Company, Rates and Regulations for Bell Packet Switching Service*, Memorandum Opinion and Order, 91 FCC 2d 1 (1982), 94 FCC 2d 48 (1983) (BPPS).] In like manner, the mere presence of voice traffic on a network does not end the analysis of its regulatory status.

For purposes of the issues raised by the ACTA petition, the Commission decisions that most clearly illuminate the boundary between basic and enhanced services are those involving the commingled provision of different kinds of services: many value-added networks, including BBN's, connect computers using identical protocols as well as computers that use different protocols. Interpreted literally, the Commission's service definitions would imply that such a network would be subject to common carrier regulation as a basic service at one moment and then, a millisecond later, would be reclassified as an enhanced service. To resolve that conundrum, the Commission held that the enhanced components of such an offering **contaminate** the basic components, and exercised its discretion to classify the entire service as enhanced, and, thus, exempt from common carrier regulation. [See *In the Matter of Decreased Regulation of Certain Basic Telecommunications Services*, Notice of Proposed Rulemaking, 2 FCC Rcd 645 (1987) at 648, ¶ 21.] This interpretation was affirmed in the 1987 Communications Protocols Order.

An informed reading of the Commission's contamination decisions confirms that the emergence of Internet telephony does not require a change in the Internet's regulatory classification as enhanced service. Internet services have always conveyed some traffic transparently, because there has always been a substantial amount of data communication that does not require the network to **employ computer processing applications that act on the format, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different or restructured information; or involve subscriber interaction with stored information.** Some Internet traffic now supports voice conversations, and may or may not require protocol conversions; in either case, the voice traffic is inextricably commingled with traffic that does require protocol conversions and other format changes. The logic of the Commission's contamination decisions still holds: value-added communication that includes any format changes may appropriately be treated as wholly enhanced, because it is impossible to split the baby without doing violence to the entire network. Congress knows how well the Commission's longstanding interpretation of its rules has worked: the recently enacted Telecommunications Act of 1996 does nothing to disturb the definitional boundary between basic and enhanced services. The Act's definition of **information service** is essentially identical to the Commission's longstanding definition and interpretation of enhanced services, and the

Act's definition of *telecommunications service* mirrors the Commission's settled view of *basic* services. [Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996) (hereafter cited as *the Act*). Compare Section 3 of the Act's definition of information service, to be codified at 47 U.S.C. §153(20), with the definition of enhanced service in the Commission's rules, 47 C.F.R. §64.702(a).]

IV. IT WOULD BE BAD POLICY TO CLASSIFY INTERNET TELEPHONY AS A BASIC SERVICE.

Even if the Commission were to find that it has legal discretion to classify Internet telephony as a basic service, it should refrain from doing so as a matter of policy, because such a decision would require fundamental reengineering of the Internet, imposing massive costs on end users and severely impairing the efficiency of services provided to them. Internet service provider networks are not equipped to differentiate between digital bits supporting voice and digital bits conveying other kinds of information. Granting ACTA's petition would require the Internet services industry to design and deploy electronic *sniffers* to detect the presence of voice traffic in the trillions of data packets that flow through the Internet. Deploying such devices throughout the Internet would involve costs beyond calculation and would sharply constrict the flow of data, in effect, requiring data packets to line up at electronic regulatory checkpoints before proceeding forward. In any event, ACTA has made no attempt to demonstrate that it would be technically feasible to produce such devices.

One of the most disturbing implications of the ACTA petition is that it would require Internet service providers to differentiate between interstate and intrastate messages and comply with jurisdictional regulatory requirements. In 1980, in the same decision in which it deregulated interstate provision of enhanced data communication services, the Commission preempted the states from regulating intrastate provision of enhanced services. Ten years later a court overturned the preemption aspect of that order, [*California v. FCC*, 905 F.2d 1217 (9th Cir. 1990) (*California I*)]. but the states were habituated to leaving enhanced service providers alone and had seen them flourish in a deregulated environment. By contrast, most states apply common carrier utility-style regulation to intrastate resellers of voice communication services. Most states would likely follow any Commission decision to reclassify Internet telephony services as common carriage and would apply traditional regulatory requirements, including certification and tariffing of intrastate transmissions. Complying with state common carrier requirements would impose massive costs on Internet service providers, in part because their networks are not designed to detect or record the geographic origins or destinations of messages.

The procedure for assigning Internet addresses differs radically from the geography-based approach used for telephone numbers. The InterNIC Registry, under the authority of the Internet Assigned Numbers Authority, allocates blocks of addresses to Internet service providers (ISPs). The ISPs in turn assign addresses or, in some cases, smaller blocks of addresses to their customers. Many of those customers assign addresses to customers of their own. Under this framework, Internet addresses are maintained by many different service providers, each of which may serve customers residing in many different jurisdictions. Unlike telephone area codes, the numerical addresses used to route messages around the Internet provide no clue to the geographic locations of senders or receivers.

Even if it were technically feasible to reengineer the Internet along the lines that grant of the ACTA petition would require, the costs of doing so would be grossly disproportionate to the trivial amount of Internet traffic that supports voice communications today. Voice communication via the Internet is at most a nascent technology, and it remains to be seen whether it will emerge as a significant force in the market place. The frame relay networks that support much of the Internet today are not optimized for voice communications. Frame relay technology requires not only that messages be digitized but that they be separated into many short *packets* of data, each of which has a separate header. These packets may be sent via different transmission paths, often arriving out of sequence, and must be reassembled near the destination. The resultant delays may be inconsequential for purposes of electronic mail or World Wide Web browsing, but can be quite noticeable for voice communication.

Some users may be willing to accept a reduction in transmission quality for long distance conversations when they are offered through Internet services with flat monthly fees, but those same fee structures are premised on the assumption that the typical user requires only a limited amount of transmission capacity. If a significant number of users begin to use the Internet for voice communications, service providers would have to reevaluate their fee structures. Indeed, BBN has already begun to offer usage-sensitive Internet connections for certain categories of

users.

In short, it is premature to assume that voice communications will emerge as a significant source of revenue for Internet service providers, or that the amount of voice traffic diverted from traditional long distance carriers will be more than de minimus. At the same time, the Commission is addressing many other time-sensitive issues under tight deadlines imposed by the Act, and some of those decisions could alter the general regulatory environment in fundamental ways. Under these circumstances, the wisest course would clearly be to adopt a wait-and-see attitude toward Internet telephony services, and revisit this issue at a later date.

IV. CONCLUSION.

For the foregoing reasons, the Commission should reject the ACTA petition.

Respectfully submitted,

BBN Corporation

Charles M. Oliver
COHN AND MARKS
1333 New Hampshire Ave., NW
Washington, D.C. 20036 (202) 293-3860 cmo@cohnmarks.com

Its Attorney

May 8, 1996